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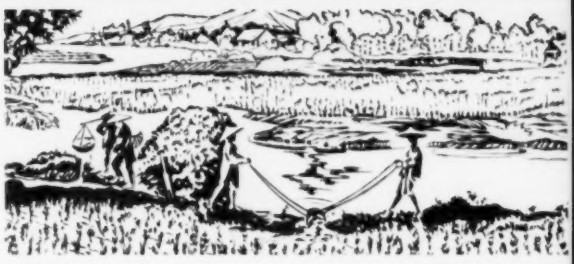

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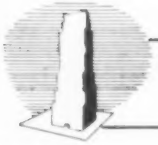

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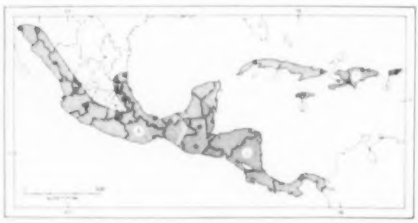

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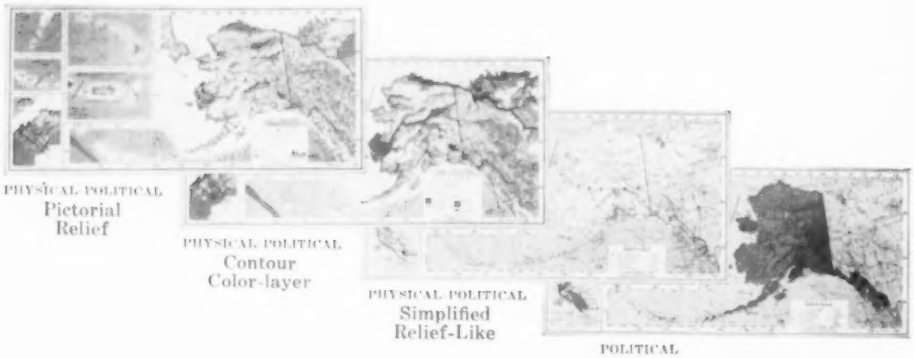

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RECENT DEVELOPMENTS IN LATIN AMERICA[1]

PRESTON E. JAMES
Syracuse University

In this, the second half of the twentieth century, no part of the world is going thru so rapid a process of change as is Latin America. Both of the great revolutions of human living—the Industrial Revolution, and the Democratic Revolution—are sweeping over Latin America, changing a pre-industrial society into something quite new. The common man, long submerged economically and politically, accustomed to clinging to the hope of human dignity after death thru the intercession of the Catholic Church, is now emerging into a new world. To him it is a world full of opportunities and hopes, yet also full of half-understood demons ready to frustrate his efforts. He has learned from bitter experience to trust no one: he wants the freedom to make his own society, in which his own concept of human dignity can be achieved on this earth; to him economic well-being is a matter of small consequence compared with the kind of social well-being that is built in accordance with his own fundamental concepts. He can repeat with the deepest feeling the words of the Cuban revolutionary leader, José Martí, who said, "Nuestro vino es agrio, pero es nuestro vino." The outsider who does not comprehend this attitude, this passionate desire to drink one's own wine however bitter, does not comprehend the profound changes now going on in Latin America.

These processes of changes, as they are taking place in each of the countries of Latin America, have been discussed elsewhere.[2] First of all are the demographic changes: the population of Latin America is growing more rapidly than that of any other major region of the world, chiefly as a result of the sudden lowering of the death rates since World War II. Second are the changes in

[1] Paper presented at the 44th Annual Meeting of the National Council for Geographic Education in New York, November 1958.

[2] Preston E. James, *Latin America*, Second revised edition, New York (The Odyssey Press), 1959.

the methods of agriculture and the systems of land tenure. Third is the amazingly rapid growth of manufacturing industry and the increasing concentration of people in large industrial cities. And fourth, but not by any means fourth in any scale of importance, is the change in the direction of more democratic institutions.

In the time available it is not possible to discuss all these aspects of modern Latin America. I shall confine myself to a discussion of the progress of the Democratic Revolution, and to an analysis of what this means in relation to the formulation of our own national policy.

The Democratic Revolution

The Democratic Resolution is associated in historical period with the Industrial Revolution, but it differs notably in the pattern of its geographic spread. Both revolutions started in the countries around the North Sea in Europe, and both have spread irregularly from that source. Geography teachers have focused their attention on the geography of the Industrial Revolution, and have tended to neglect the other, perhaps because it seemed to omit the "geo" from geography. It is high time to look at all the significant elements in the modern scene, as we profess to do.

The word "democratic" is so frequently misused that we must review again the meaning we attach to it here. We have suggested previously[3] that there are five basic aspects to the revolutionary changes that introduced democracy as a principle of political organization: 1) equality before the law; 2) the right to the protection from the arbitrary acts of those in authority; 3) the right to be represented where laws are made or taxes are levied; 4) the right to select representatives or to express opinion on public policy in a secret ballot; and 5) the right to knowledge and the free use therof. These concepts are widely accepted in the English-speaking world. In the United States, in spite of the publicity given to still unsolved problems of race relations, these principles have in fact been accepted and applied to more people over a wider geographic area than ever before in the entire history of mankind. Altho there have long been outstanding liberal leaders in Latin America, and altho liberal movements have gone a long way

[3] Idem, "Four Basic Trends in Postwar World," in Clyde Kohn (ed.) *The United States and the World Today*, Chicago (Rand McNally & Co.) 1957, pp. 2-17.

toward the establishment of these principles in some countries, they are still far from widely accepted, especially by the politically powerful groups.

Democracy is not something a country has, or does not have. No perfect democracy has ever existed, human behavior being what it is. But it is possible to establish a scale, running from the complete subservience of the individual to the state, on the one hand, to the complete acceptance within the state of the democratic principles enumerated above. There are five criteria for measuring the degree to which democratic principles are actually in operation: 1) do the people of a country enjoy complete freedom of expression? 2) are elections held with ballots that are really secret, and are the ballots honestly counted? 3) does the government accept the verdict of the voters and step down from office when the people so direct? (4) are political parties permitted to organize and to discuss public issues freely? and (5) are the courts truly independent?

Applying these measurements to the countries of Latin America, we must place among the more democratic states Puerto Rico, Costa Rica, and Uruguay; and among the least democratic states the Dominican Republic and Paraguay. The others are at various stages in between. All are in process of more or less rapid movement toward the democratic end of the scale. The rise of democracy, so defined, is one of the outstanding facts about Latin America in the second half of the twentieth century; and any failure to appreciate just what this means could be a most fundamental error of judgment on the part of countries outside of Latin America.

As long as the great majority of the people have nothing to say about public policy it makes little or no difference what they think about economic development. Traditionally in Latin America economic development has been for the benefit of a privileged minority—the landowners, the officers of the army, the Church, the political leaders. The concept of a mass market, and of an economy based on high volume—low profit per sale, was something people read about but scarcely understood.

In modern Latin America this situation is changing rapidly. The change began with the health programs and with the effort to reduce the proportion of illiterates. As more and more people learn how to read and write, the ideas of democracy begin to spread. But the centers of change, and the groups most insistent on attacking

the traditional system of power and privilege, are the universities and the students. Students have always taken a more active interest in political questions in Latin American than they do in Anglo-America; and students have been accustomed to seek radical solutions, even to the extent of attacking the established order with violence. There was a time when a majority of the people, in a country like Peru, would watch in wonder the student uprisings and strikes; but now, as more people find out what is going on, more people are ready to join in the demands for change.

And what do people want to change? Primarily they resent any system in which certain individuals enjoy special treatment before the law, or enjoy privileges because of status. Especially do they resent it when foreigners enjoy such privileges. The struggle for independence from Spain derived its support chiefly from people who resented Spanish administrators appointed by the King and sent to govern the colonies. In more recent times, there has been a mounting resentment against foreigners who enjoy a higher standard of living than the Latin Americans, who receive more pay than the Latin Americans who work with them, and who live in exclusive "colonies" and patronize exclusive clubs in Latin American cities. The resentment against the British has been especially strong where the British businessmen were most active—in Argentina. The resentment against North Americans is greatest where there are the most North Americans—in Venezuela. As more people find themselves able to express resentment, they cry out as if with one voice against economic colonialism of the kind developed by the British in Argentina, or by the North Americans in Puerto Rico and Mexico. They are opposed to economic development which involves the production of raw materials by workers who are paid low wages, and which involves the export of raw materials and the import of manufactured articles. Especially are they opposed to systems that reduce the price received for raw materials at the same time that prices of manufactured articles are rising. They want and need investments of foreign capital, but they do not want foreign capital in speculative undertakings. And because public utilities, such as electric power, urban transportation, gas, and water, are so important in the daily affairs of the people, there is an insistent demand that these businesses should be owned by the government, not by private foreign corporations. The strength of this demand bears little relation to the quality of the

services rendered. And all over Latin America the newly literate people learn of the improved level of living in Venezuela resulting from the profits from oil, and they resent the idea that even half of these profits should be carried away by a foreign-owned corporation. None of the Latin-American countries possess either the capital or the know-how to explore for oil themselves, yet they are all reluctant to permit exploration and development by the big corporations. In Brazil one of the most popular slogans is "O petróleo é nosso"—the oil belongs to us. This expresses the idea that the Brazilians would prefer to go without oil rather than permit the large oil corporations to develop it.

PROBLEMS OF INTER-AMERICAN RELATIONS

Certain conclusions can be formulated regarding the policy of the United States in its dealings with the other American countries. How do we stand in our relations with Latin America, and what should be the objectives of our foreign policy?

We do not stand very well. First of all we have to live down the historical record of military invasion and conquest which started with Texas and only ended with the withdrawal of the Marines from the Antilles and the abrogation of the Platt amendment. Only since 1948 have we been committed to cooperative action on a basis of equality with other countries of the Hemisphere. In many countries there is genuine fear that the United States might return to its policies of expansion and of the use of force in international dealings.

Second, North American business enterprise in Latin America has not always accepted the kind of social responsibility that today seems to be "good business." There are still some North American business concerns whose dealings with Latin Americans are strictly for the purpose of quick profits. The fact that most businessmen today realize the need for bringing long-term benefits to their customers and are ready to accept responsibility for social problems in the communities they serve is not widely believed in Latin America.

Third, the prevailing ignorance regarding conditions in Latin America is a constant source of irritation. All too often our schools, our popular books, and especially our tourists have adopted what may be described as "the little brown cousin" attitude. The Latin American is portrayed as an amusing character, probably asleep

under a cactus, or strumming a guitar under the balcony of some damisel. Latin Americans are not like this, and they have not been for many generations.

And fourth, the Latin Americans are very poorly informed about the United States. Most of their impressions of life in North America are derived from the movies—and usually the more lurid ones. That North Americans appreciate music, literature, art, or that they might have high ideals of fair-play and service in their dealings with other people, comes as a surprise to many of our neighbors. Newspapers give big headlines to race conflicts, to strikes, to the trials of dishonest labor leaders; but the positive accomplishments, in which the people of the United States ought to take pride, are not adequately presented.

The average Latin American looks at the United States with a mixture of envy and dislike. He is envious because of the material comforts we possess, the efficiency with which our engineers and our workers carry out complicated programs of construction, even because of the prestige of the United States as a nation. But he is disgusted by these same things: he regards other things as more desirable than material comfort and efficiency, and he resents the implication that his own country is not equal in dignity and worth to any other country in the world. But when the Latin American thinks of equality what he means is the equal right to be distinctive, to develop his own way of living, his own system of values. He resents the idea that to make progress he must adopt anyone else's standards. Equality means to him the right to be different.

What, then, do the people of the United States desire to obtain from their relations with the countries of the "good neighborhood"? It would seem that there should be at least three major objectives. First, in a world of conflict between nation-states, from which the United States cannot stand aloof, we need security from attack. A study of the geography of our international position as seen on a globe shows that all the major actual or potential centers of economic or military power in the world are to the north of the United States. Latin America constitutes the rear of our international position. Security from attack suggest the building of friendly-cooperative arrangements for purposes that are openly and mutually agreed upon. The need for security is most pressing in the countries and colonies of Middle America, and in Brazil where the great bulge of the continent in the Northeast provides an easy route of

approach to the Western Hemisphere from Africa. The need is less pressing in the more remote parts of South America.

In the second place, the United States needs continued access to certain raw materials of strategic importance. As long as there is a threat of war, it is a matter of protection to build up Western Hemisphere sources of essential raw materials even when these sources are more costly than are those of southeast Asia—for example, the tin of Bolivia. This should be done, however, as a defense measure, not as an attempt at permanent and complete self-sufficiency.

In the third place, the United States must recognize that in the long run, however the conflicts of the present period may be resolved, the maintenance of a high standard of living in any one part of an interdependent world becomes difficult or impossible if there are large numbers of very poor people elsewhere. It should be a matter of national policy to do all in our power to raise the material well-being of the Latin-American people. But such a program is by no means so simple as it can be made to sound.

No policy of this sort can be applied everywhere by the same methods. The greatest care and understanding must be used to adjust the methods to the conditions and needs of each country. Investments that are not excessively speculative and which do not result in the destructive exploitation of resources are welcomed; and technological instruction where North American technology is superior to that in use in Latin America (which is not everywhere the case) would have the effect of raising living standards. But technological assistance must be given intelligently. To establish a modern medical service in Latin-American countries with high birth rates without also making equal efforts to increase the production of basic foods is the kind of unintelligent application of technology which has done so much to impoverish the people of Puerto Rico. Before we can apply North American technologies to Latin-American conditions we need to study all the conditions of life in the communities to be benefited. We need to recognize that when one part of life in a community is changed, this change brings far-reaching readjustments that go far beyond the understanding of the technologists themselves. We need programs of "area study" in which the whole way of living, the whole relationship of the people of a community to the land, are described as a basis for planning the proposed changes and forecasting the consequences of remedial policies. If we attempt to export North American tech-

nologies blindly and piecemeal, the results could be disastrous.

We need, also, to plan out inter-government relations with great care. In the atmosphere of the second half of the twentieth century the use of armed force to intervene in the affairs of another country is no longer possible for democratic countries. Yet almost every act of the "colossus of the North," even the act of refraining from acting, constitutes a form of intervention. We should not lose sight of the principle that we in the United States are the custodians of some of the most revolutionary new ideas of human relations the world has seen for thousands of years. We, not the communists, are the revolutionaries of our time. We should not permit our desire to refrain from interfering in the domestic affairs of another country to lead us to bestow medals of honor on dictators, however friendly they may be toward the United States. No better way could be designed to insure a widespread hatred of the United States which would break loose as soon as the inevitable trend towards democracy has deposed the dictators. We should make it clear that a dictatorship based on force is abhorrent to the United States, and that we look with favor on the rise of liberal governments. If we do not rapidly change our national policy to adjust to the changing conditions in Latin America, we shall be in great danger of losing the war of ideologies in which we are currently engaged.

COLOMBIA'S POPULATION RESOURCE

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The worth of the individual to family, community, and society is determined to a large degree by his state of health. In spite of mechanization and automation there are labor categories, at the top and at the bottom, even in the United States which the machine has been unable to replace. The human resource, as a factor of production, is even more indispensable in lesser developed economies. For it takes plenty of "brawn and brain" to advance frontiers, and to effect other positive changes in the landscape.

Moreover, the wealth of natural resources can contribute to the gross national product only insofar as the human resources are likewise considered an integral part of the equation. History is

replete with examples of civilizations whose decline was attributed largely to improper consideration of the natural resources and/or human resources. Certainly a common denominator of freedom-loving peoples everywhere should be to avert similar catastrophes.

Wisdom overrides any tendency on my part to generalize on a "typical" Latin American population resource. Rather, this paper will merely assess the status of the present day population of Colombia, and indicate measures taken to bring that resource more into proper focus.

Composition of the Population

The composition of Colombia's population differs from that of the other Andean Countries of South America. Colombia is mostly mestizo—the others Indian. Sixty-nine per cent of the total population are said to be of mixed blood. Of the remainder, 25 per cent are white, four per cent Negro, and two per cent Indian. This because the conquering Spaniards so successfully fulfilled their obligations to the Spanish Crown that the native Indian soon lost his identity whether due to miscegenation, overwork, wars, or new diseases to which they were not immune.

Early Groups

There were two major groups of pre-Colombian Indians, the Chibchas and the Caribs. The former held forth in the fertile valleys of the Cordillera Central, the Cauca Valley, and the high plateaus of the Eastern Cordillera, early founding the city of Bocatá near the present city of Bogotá (1538). Like the Incas the Chibcha nation consisted of several tribes that pursued an agricultural-commercial way of life and thus attained a high culture. Today the mestizo dominates the uplands.

The Caribs, in contrast, were a vigorous and warlike people who lived in the Caribbean lowlands. The inhabitants of the Goajira peninsula ethnologically belong to the Carib group. Along with the Motlión Indians west of Lake Maracaibo they have been able largely to resist acculturation.

Only small numbers of the aborigines can be identified. In addition to those of the Goajira, are isolated groups in the southern uplands, and the forest dwellers of the Southern Llanos Orientales.

During colonial times Negroes from Africa and the West Indies were brought in as slave labor on plantations, in mines, and in bridge and road building. The great wall around Cartagena was so

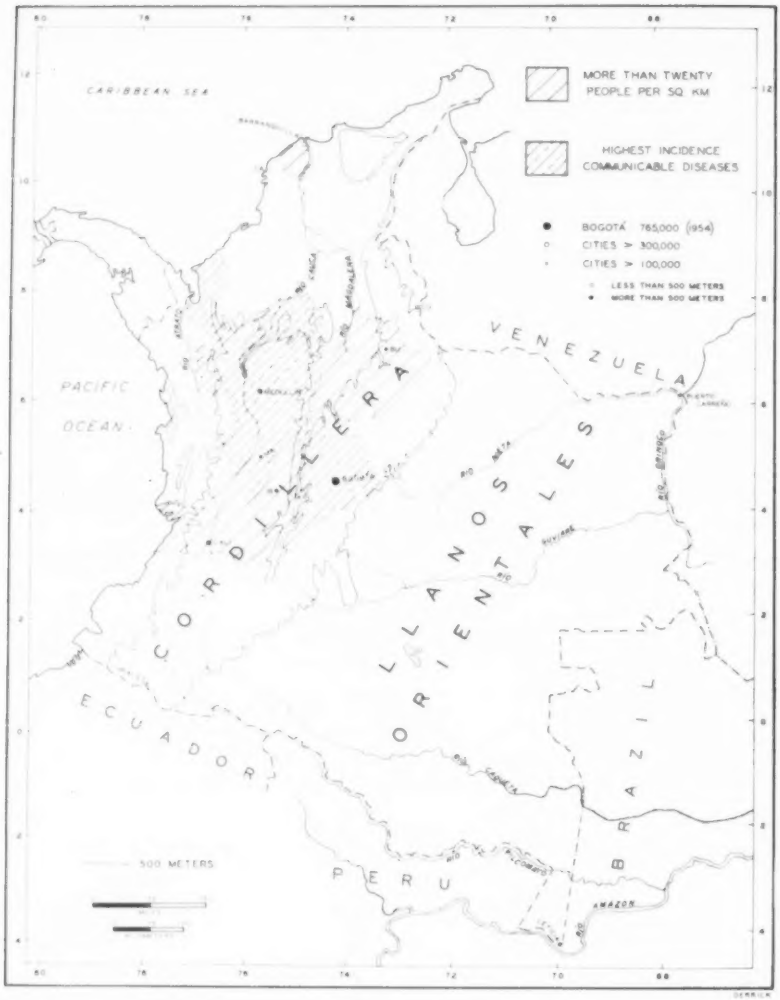

Fig. 1. Density of Population and Incidence of Communicable Diseases. Ca—Cartagena, Ma—Manizales, Bu—Bucaramanga, Cu—Cúcuta, and Ib—Ibagué.

Three Departments had the highest incidence of the ten leading communicable diseases, of which helminthiases, diarrhea, and dysentery topped the list: Antioquia (Medellín), Caldas (Manizales), and Cundinarca (Bogotá). These Departments were among those most densely populated, and with upland centers of population engaged chiefly in coffee production. Source *Anuario General de Estadística 1954*, Colombia, 1955.

constructed. To a large extent the Negro displaced the native in the valleys along the lower courses of the Magdalena, Sinú, and Atrato Rivers. Almost all the population of Buenaventura and Barranquilla is of negroid strain. They, too, have experienced acculturation. Mulatto and zambo elements today can be found among the ribbon-like settlements scattered along the rivers and coast. In the Atrato Valley they work platinum and gold placer mines, and collect products from the forest.

Growth of Population

Since 1900 Colombia's population has almost tripled, or an increase of 197 per cent in a half century. The rate of natural increase per annum, in the interval 1938 to 1951, has been 2.2 per cent. Such a rapid growth cannot be explained by large numbers of immigrants, for Colombia has not been so privileged. It must be accounted for almost wholly by an acceleration in the rate of natural increase in the population. For example, from 1920/24 to 1951 the crude birth rate augmented from 27.1 to 36.2 per 1,000 people, while the crude death rate, though fluctuating, remained about the same at 14.3 per 1,000 people. (In 1954 the figures for birth and death rates were 38.3 and 12.2, respectively.)

The expectation of life is relatively short, perhaps 37 to 40 years at birth. Also, the population is young, at least 40 per cent of whom were under 15 years of age. It is not surprising then to find that only a little over half of the population belonged in the economically active category, and of the 5,352,000 income earners in 1947, only 2,880,000 were equivalent to full-time workers. That latter group had to maintain itself and in addition provide economic necessities for numerous others unable to earn their own livelihood.

Centers of Population

Colombia, a predominantly rural society, is confronted with the same force at work in so many other world regions, namely, growing urbanism. Of the 11,548,172 people recorded in the 1951 Census, 36 per cent were urban, but 64 per cent rural. (The figures for 1938 were 29 per cent, and 71 per cent, respectively.) There were eight cities with a population of more than 100,000. Together they made up almost one-fifth of the country's population. The cities were: Bogotá (643,324), Medellín (348,189), Cali (284,186), Barranquilla (279,627), Cartagena (128,877), Manizales (126,201), Pereira

(115,342), and Bucaramanga (112,252). All but two of these cities are in the uplands.

Cali is said to be the most rapidly growing city in the country, having increased 175 per cent in less than two decades. Bucaramanga was second in rate of growth with 150 per cent, and Medellín, third, with a 129 per cent increase.

These data hold the clue to the distribution of Colombia's population. Preference has been tendered the tropical uplands. More than a third of the Nation's people live in the Departments of Cundinamarca (Bogotá), Antioquia (Medellín), and Valle del Cauca (Cali). Thus Colombia has a large urban nuclei at each corner of an equilateral triangle: Bogotá-Medellín-Cali. Each has a personality distinct from the others. Save for the airplane adequate surface transport does not connect these cities. This drawback is soon to be remedied, however. Bogotá, on a plateau in the Eastern Cordillera, is the oldest of the three and has remained the center of culture, education, and government. Medellín, in the upper Porce Valley of the Central Cordillera, noted early for coffee and cattle, has, in addition, become the leading manufacturing and mining center. While Cali is the big commercial center of the upper Cauca Valley and West Coast Region. Its rapid growth may be explained in part by agricultural expansion, construction of new factories, and by its strategic location commanding the trade of a wide area.

The political divisions having the least population and the greatest areal extent are in the Llanos. The Caribbean and Pacific lowlands are only slightly more populated.

Low Health Levels

While the death rate has been fluctuating somewhat over the past few decades the battle against diseases is by no means won. Colombia still has one of the highest rates of infant mortality in Latin America. It has remained above 100, and was still 102.7 in 1954. In that year of 150,853 recorded deaths for all ages, 48,734 were children under one year of age, and 50 per cent were under four years of age.

Infant mortality in the coffee producing areas of the Department of Antioquia is believed to be the highest in the world (193.4 per 1,000 live births). Paradoxical as it may seem, it is in the damp, insect-ridden atmosphere of the coffee fincas, where shade-grown coffee predominates, that the incidence of hookworm is highest.

The great killers of the children were whooping cough, diarrhea and meningitis. Diseases common to adults were tuberculosis, heart ailments, and malignant tumors. To these must be added some that are common to all ages, namely, jungle yellow fever, malaria, smallpox, treponematoses (syphilis, yaws, pinta), rabies, louse borne typhus, and helminthiases (worms acquired by ingestion, skin penetration, and the bite of an insect). Helminthiases, diarrhea, and enteritis were responsible for the greatest mortality in all age groups. Especially was this true in the Provinces of Antioquia, Cundinamarca, Caldas, Santandar, and Atlántico which had the highest recorded incidence of those diseases.

Some of these illnesses were due to poor housing, inadequate and improper diet, exposure, barefootedness, lack of personal hygiene, unsatisfactory water supplies, and general unsanitary living conditions. Others were related to prevalence of insects and rodents that carry infectious diseases. But one can only hazard a guess as to the extent of mineral and vitamin deficiencies which are believed to be rather widespread.

The Instituto Nacional de Nutrición estimated that a Colombian agricultural worker consumed only 1,800 to 2,000 calories daily—not enough to sustain manual labor. Probably habit patterns and economic conditions played a dual role in helping to account for the dietary insufficiency and imbalance. The average consumption of protein was said to be eight per cent, of fats 12 per cent, and of carbohydrates 80 per cent. Nutritional goitre, edema, scurvy, pellagra, skin and eye infections, and dental caries were high. In some Departments goitre has been reported in 70 per cent of the children.

Dietary staples consist in the coastal areas of rice, coconuts, bananas, and a little seafood; in the coffee regions of corn, panela (coarse brown sugar), yucca, and plátano; in the mountains of Antioquia and Caldas of corn, beans, yucca, and plátano; and in the cold uplands of potatoes and corn. The overall deficiency in the diet of animal protein, dairy and poultry foods, and the leafy green and yellow vegetable undoubtedly are responsible for mineral and vitamin deficiency diseases . . . the hidden hunger of the poorer classes.

Need for Continued Action

The Ministry of Hygiene is the overall governmental organization purposed to correlate action programs for raising health levels. The Rockefeller Foundation has aided in a yellow fever compaign,

also in the establishment of a National School of Hygiene. A cooperative "Servicio" with United States know-how built and equipped a National School of Nursing. Meanwhile, the Pan American Sanitary Bureau (founded in 1902), the oldest health body in the world, now a part of the World Health Organization of the United Nations, continues actively in programs to control and to eradicate communicable diseases.

Low health levels, together with the high rate of illiteracy, constitutes one of Colombia's biggest road blocks. The continuing seriousness of these problems should be faced head-on, and their solutions carefully planned and carried out. Colombia, like others of her Latin American neighbors is desirous of advancing her economy, and raising her standard of living. A basic premise for realizing these worthy objectives is to hasten the conservation of her human resources.

ECONOMIC CHANGE IN AFRICA

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Newspaper and magazine articles continue to make reference to "awakening" Africa. The adjective "awakening" is passé. Africa has awakened. The will of the Africans is increasingly dominant, a fact which means the United States must develop awareness of the march of events on that continent and of the aspirations of its peoples.

This article, based upon an address delivered at the NCGE meetings in November 1958, is designed to present some of the most important changes taking place on the continent of Africa. Reflecting the interests of an economic-geographer, the emphasis is upon those changes with an economic context and those which are capable of being mapped.

Political Evolution

Perhaps the most significant economic changes in the years ahead will be those resulting from the accelerating political evolution of Africa. Before the war, only Egypt, Liberia, and the Union of South Africa were independent. Since the war, Morocco, Tunisia,

Libya, the Federation of Ethiopia and Eritrea, the Sudan, Ghana, and Guinée have been added, so, in 1959, 41 per cent of the population and 29 per cent of the area of the continent are politically independent.

By the end of 1960, Nigeria, the largest and most populous British colony, Togo, both Cameroons, and Somalia will be independent. Under the new French constitution, the far flung French African territories and Madagascar have such a high degree of local autonomy, Africans having the leading voice, that they are but one step removed from independence. Most of them are likely to continue in some form of association with France, but they will increasingly operate from positions of political equality. Counting these areas, at least 60 per cent of Africa and 71 per cent of its people will be independent by 1961. It is important to state that progress toward self-government in many areas is being aided and abetted, not fought, by the metropolitan powers.

Other nations will follow closely: Sierra Leone, Gambia, British Somalia, Uganda, Tanganyika and, I believe, Algeria. There will then be pressure from the protectorates of Nyasaland and Northern Rhodesia, and the European minority in Kenya will probably have lost its dominant position. I would guess that in ten years at least 75 per cent of the continent and 86 per cent of its population will be independent. Very strong pressure will develop even in Congo, where the Belgians have been startled by the powerful political impulses unleashed in the recent introduction of urban elective systems. In Africa, the baby step soon changes to a run. As new countries are created the pressure upon the remaining colonies, including those of Portugal and Spain, will grow enormously, perhaps becoming irresistible. It will be a busy cartographer indeed who keeps up with these headlong changes.

How will these political metamorphases influence the economic scene? First, there may be a marked reduction in the amount of government and private aid forthcoming from the metropoles at a time when capital requirements will be increasing. Certain developments may, however, tend to sustain the flow of capital—for example, the Foundation for Mutual Assistance in Africa South of the Sahara (F.A.M.A.), some kind of association of African territories with the Common Market and/or Free Trade areas, and a proposed new multi-lateral African Development Association with European, American and African membership. The goal should be

not only to continue aid from the former metropolitan powers but to enlist the support of other European nations. Also, the more I study Africa, the stronger is my conviction that the most effective form of aid is to increase the opportunities for sale of African staples in European and other markets.

A second effect of the political evolution in Africa will be the increased intrusion of the U.S.S.R. and its captive nations in Africa. The Soviet Union will be characteristically opportunistic: embassies and consulates will be staffed, loans and technical assistance will be offered, opportunities for education will be extended, and seemingly favorable trade arrangements will be made when they can reflect most disparagingly upon the west.

A third effect will be that the United States will find itself, whether it likes it or not, increasingly involved from the economic standpoint in African affairs. An extension of greater monetary and technical assistance to more nations will be called for. So also will there be a need for greater awareness of the impact of our trade policies on developing economies. Realistic and effective aid and trade will positively benefit both the American and African economies.

Thus far, I have assumed that the emerging African states would have the same boundaries as the present territories. But *will* the extremely artificial boundaries set during the partitioning of Africa be maintained?

Political Units

Some observers point to the divisive tribal tendencies apparent in Ghana, Nigeria, Uganda and elsewhere or to intratribal frictions as in Somalia where the motto is said to be *Agarib agirib*—relatives are scorpions. They note further the rather tenuous bonds of the existing federations of French West and French Equatorial Africa and of the Rhodesias and Nyasaland. These observers suggest that following upon independence, numerous partitions will occur or that there will be an outright Balkanization. Such a trend would be regrettable from the economic standpoint because it would result in the formation of a large number of economically non-viable units, some of which would have the further disadvantage of a landlocked position.

There are, however, forces working toward the formation of larger political units or associations. The formation of a Maghreb

Union is likely in the north—joining Morocco, Algeria, and Tunisia. Egypt has pretensions of amassing a much larger federated area. Guineé is a possible source of centrifugal force, tho this position may be negated by rapid achievement of independent status in other French West African areas. Ghana is another obvious focal point, and the announcement in November 1958 of Ghana-Guinée union is an interesting example of associational tendencies. The very stupidity of some existent boundaries may contribute to the formation of larger territorial units because there are strong desires for uniting tribal groups split by these colonial boundaries. Finally, the intellectual endeavours toward defining an African personality and promoting "la negritude" may also prove important. It is impossible to predict just what the future boundaries of African states will be—but the changing resource and transport patterns may have tremendous economic impact.

Economic Change

I must now turn from the politico-economic to the more purely economic scene. Here I shall confine my remarks to four areas where most significant developments are occurring or impending.

First, there are the many improvements that are being made on the infrastructure—the basic public services—of African nations—all of which add up to one of the most important economic developments in Africa. The inadequacy of transport facilities, for example, is listed among the top three African problems by experts in many disciplines. While it will take many years to overcome the shortcomings, striking advances have and are being made. It is no longer accurate to generalize that Africa is plagued by difficulty of access from the sea. Entirely *new* deepwater ports have been constructed in Liberia, Ivory Coast, Angola, Mozambique, and Tanganyika, and others are under construction in Liberia, Ghana, Dahomey, and Eritrea, while major improvements in facilities may be noted for many other already existing ports.

New railway extensions in 12 countries have also diminished the heavy charges suffered by regions with inadequate means of transport and have reduced the impeding effect of Africa's difficult landform obstacles. Even more important have been improved roads. All these transport developments are, like other features of the infrastructure, absolutely basic to other forms of economic advance. In toto, they result in impressive changes on the map of Africa.

A second sphere of important economic change is in water control. The East Africa Royal Commission Report ranked it with transport as the greatest material need of that area.

Africa, which many Americans picture as a steaming jungle, actually has the largest total area of dry lands of any continent. Peveril Meigs has estimated that 64 per cent of the continent is arid or semiarid; E. B. Worthington in his excellent new book *Science in the Development of Africa* states that in at least half of the continent water is the principal factor limiting economic advance, that only 5 per cent of the precipitation falling on the continent ever reaches the sea, the rest being used up or lost by evaporation.

The desire to effect better control of available water must obviously be very strong. Important irrigation developments include the proposed High Dam or "Nasser's Pyramid" in Egypt, which will have 26 times the capacity of the present Aswan Dam and be capable of increasing the irrigated acreage of that country by one-third or 2 million acres. Others are the 800,000 acre Managil extension of the Gezira scheme, continued enlarging of the Office du Niger in the middle Niger delta, and programs for development of the Rufiji, Zambesi, Tana, Cunene, Senegal and other river basins. These projects will play increasing roles in the production of economic goods and will, incidentally, be one of the most important forces affecting changes in population distribution.

While Africa is impeded by widespread aridity, it also has, in the equatorial section, so much water falling on such high land that it has the greatest hydroelectric potential in the world, some 38.7 per cent of the total world potential at ordinary minimum flow. Here is another obvious area for water control projects. The extent of existing hydroelectric development, however, is surprisingly small—less than $\frac{3}{4}$ of 1 per cent of the world total—especially surprising in view of the shortage of coal, the high cost of burning wood, and the difficulties of moving fuels on the inadequate transport net. But this situation is about to change and the map of Africa will soon show numerous great dams and some of the world's largest artificial lakes.

Five of the greatest projects—Konkouré, Volta, Edea, Kouilou, and Inga—with a total capacity of 3.6 million kilowatts—are designed to produce "packaged power" in the form of aluminum ingots. The Inga scheme represents the beginning development of

the lower Congo which has a potential capacity of 20-25 million kilowatts, the higher figure being almost equal to the total installed capacity of all the hydroelectric plants in the United States or 60 per cent of the installed capacity in all of Western Europe in 1956. Other large scale hydroelectric schemes include the Kariba Dam on the Zambesi and a new dam below the Owen Falls Dam on the Victoria Nile.

Spectacular as some of the irrigation, hydroelectric, and multi-purpose projects may be, the multitude of small-scale water-control developments are equally significant: literally thousands of wells have been dug in post-war years to improve domestic and stock water supplies; "hafirs" or man-dug reservoirs, and small earth and stone dams are also important. In many areas, no greater gift can be made to the African than a sure and sanitary supply of water.

A third area of important economic change is in the mining and industrial sphere. The most significant new mining developments include the major petroleum and natural gas finds in the Sahara, prospective large-scale increases in production of bauxite and iron in several territories, and opening up a tremendous manganese body in French Equatorial Africa. In industry, greatest progress will probably continue to be made in the Union, Southern Rhodesia, and the Congo. Many nations of Africa have pretensions toward industrialization but they have also had many misconceptions. Advances are likely to be selective, with the greatest extensions being in the further processing of African raw materials, in the construction industry, and in a limited number of market oriented establishments such as textiles, clothing, shoes, beverages, furniture, and containers.

The last of the changes which I think are most significant is in agriculture. Numerous changes are taking place in this crucial and difficult field. One of the potentially most significant is the substitution of individual freehold for tribal systems of land tenure. The Native Land Husbandry Program in Southern Rhodesia, the Swynnerton Plan in Kenya, and the *paysannat* or "corridor" system of Congo and other areas are outstanding examples of programs which involve tenurial changes, tho they contain other features designed to better indigenous agricultural practices.

Alterations in tenurial arrangements will have profound socio-economic influences, some of them very difficult to foresee, but they

may be expected to stimulate initiative, permit otherwise difficult physical improvements, and eventually break down the restrictive tribal and racial boundaries of Africa.

These then, very briefly put, are what I consider the five most important changes in the economic sphere: those resulting from rapid political evolution, the developing infrastructure, improving water control, continuing but selective extensions in mining and industry, and adoption of western tenurial concepts in agricultural land use.

Demand for Education

One other change with all-pervasive influences requires mention. It is the ever-growing demand in Africa for education, a demand reaching almost pathologic levels in certain regions. This holds the greatest hope for Africa. We geographers have a responsibility to see that education in *this* country *regarding* Africa responds to the urgency created by its quickening evolution.

INDONESIA'S HUMAN RESOURCE PATTERN

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Among the potentials for economic development in the new nation states of Southeast Asia none is, in the last analysis, so important as the aggregate of factors that shape the mental and physiological characteristics of the population, that is the human resource pattern as we may perhaps call it. These influences on the development of mind and body determine much of that rate of sustained advance so ardently desired by the peoples of this area. The following pages will indicate briefly the range and chief features of human resources in Indonesia, the world's largest island republic.

Mixture of Racial Strains

Indonesia has long been a meeting place of many different racial strains. Whether one accepts the theory of successive racial invasions (i.e. by Negrito, Veddoid, Proto- and Deutero-Malay groups) in Indonesia, or the modern suggestion,[1] based on biologi-

[1] Felix M. Keesing, *Southwestern Journal of Anthropology*, vol. 6, 1950, pp. 101-119

cal findings, that the incoming racial groups may have exhibited a high degree of genetic similarity and became differentiated only as a result of their particular Indonesian environment, physiological differences (e.g. in height, weight, pigmentation, hair texture, jaw formation, cephalic index, and so on) between the various population groups are often quite marked. In addition to the invaders of pre-historic and ancient times there are the migrants of a more recent era who have been mixed with the local population, such as the Chinese and Japanese (the latter once employed by the Dutch East India Company as mercenary soldiers), Arabs and Indians, and many members of European racial stocks like the Portuguese, British and Dutch. With such a whirlpool of races it is understandable why there are many cultural differences between the peoples of the Indonesian islands, and why relative undeveloped groups may be found in one region, and those with ancient and advanced civilizations in another. Of the inhabitants of Western Sumba, in eastern Indonesia, for example, one student has noted,[2] that "people in that part still live completely as in the megalithic period, are clad in girdles of bark, loosen big stones with a single iron tool" and adhere to age old animistic and fetishistic beliefs. In contrast, the culture forms of other Indonesian peoples have in the course of their evolution reached very high plateaus of artistic refinement and philosophical depth. One thinks here, for example, of the Javanese *wayang* or folk theater, with its intricate mythological and mystical background as well as its great dramatic beauty.

Ravages of Disease

Only in the most primitive parts of the world is man more subject to the ravages of disease than in Indonesia. Life expectancy can only be estimated, but is usually set at 32 years of age. Indonesia is one of the world's great endemic areas of malaria. The spleen index in coastal areas frequently reaches the 90th percentile mark or even higher. In regions of high malarial incidence the annual mortality rate from this disease alone may range from 20 to 40 per 1000. Tuberculosis too is a major cause of death, comprising perhaps from 8 to 10 per cent of all deaths and showing a definite increase since World War II. At least half of the world's cases of yaws, that is from 12 to 15 million cases, are found in Indonesia,

[2] W. Keers, *An Anthropological Survey of the Eastern Little Sunda Islands*, Koninklijke Vereeninging Indisch Instituut. Mededeelingen no. 74. Afdeling Volkenkunde no. 26 (Amsterdam, 1948), p. 5.

and hookworm, leprosy and trachoma are all widespread. Cholera has been virtually eradicated, but plague still erupts from time to time, while venereal diseases affect not less than from 10 to 20 per cent of the burgeoning urban population.[3]

Tho slow gains are made in providing medical and hygienic facilities there is a real question if this advance is keeping step with Indonesia's rapidly growing population (an annual increase of at least 2 million people to the present 84 million). In 1951, for example, the Minister of Health stated that there was 1 physician for every 60,000 heads of population, but in 1957 according to United Nations' statistics the ratio had fallen to 1 physician for every 71,000 heads.[4] There are about 3000 government and some 270 private clinics in the country, where relatively inexpensive medical care may be had, but the clinics are badly overburdened and ill suited to careful diagnosis and regular treatment. Only 1 hospital bed is available for every 1250 head of population. While improved methods of registry may also account for it, there remains the fact that the number of leprosy cases between 1952 and 1956 increased from about 16,000 to 24,000, and that now nearly one-fourth of the nation, or 20 million people, are suffering from trachoma. Extensive checks also suggest that about 15 per cent of all pregnant women are afflicted with a veneral infection.[5] These data, recently provided by the Ministry of Health, are not encouraging. Of concern is also the fact that periodically diseases which were believed to be under control flare up again: a case in point was the sudden epidemic, involving hundreds of cases, of typhoid and paratyphoid in the city of Semarang in Central Java in June, 1958. The human growth potential of the Indonesian nation is then still heavily curtailed by various diseases, as also becomes clear from the recent statement of the chief of the Indonesian government's Malaria Institute in Djakarta that "malaria is largely responsible for the fact that Indonesia has the highest infant mortality rate in the world."[6] (Current estimates of Indonesia's infant mortality rate fluctuate around 200 per 1000 births, as compared to about 80 for Japan and 30 for the United States.)

[3] E. Ross Jenney, *Public Health Reports*, vol. 68, 1953, pp. 411-412.

[4] J. Leimena, *The Upbuilding of Public Health in Indonesia* (Djakarta, Ministry of, Information, 1952), p. 55 and *Indonesian Observor* (Djakarta), April 8, 1958, p. 3.

[5] Aziz Saleh (Minister of Health), *The Indonesian Spectator* (Djakarta), April 1, 1958, pp. 18-19.

[6] *Indonesian Observor*, June 25, 1958, p. 2.

DIET

Another limiting factor is diet. Unfortunately adequate studies are lacking in this connection, but even before World War II analyses of diets of coolies working on Western estates indicated below standard nutrition levels, and since that time the situation has if anything, deteriorated. Dr. Johannes Leimena, a vice-premier in the present government, who, as a physician has long been active in Public Health work in his country, declared on September 15, 1958, that the amount of calories, protein and albumen absorbed by the average Indonesian "is far below the required standard, quantitatively as well as qualitatively," and that the nutritional level of the Indonesian's diet compares unfavorably even with underdeveloped countries in Indonesia's vicinity. Apart from the protein deficiency, the inadequate quantity of calcium, iodine, cholesterol and vitamin A in the average diet are reportedly particularly alarming. Owing to various marketing bottlenecks an essential diary product like milk is often in short supply in larger cities, and even if available in pasteurized form is so expensive as to put it beyond the reach of most of the urban population. Malignant malnutrition (referred to as *kwashiorkor*) is, as various studies have shown, a scourge among the very young in the larger cities, "and it is perhaps the most frequent cause of chronic infantile sickness" in Djakarta.[7]

As is known Indonesia's economy in the last two years has in many respects retrogressed, due in part to her internal political difficulties. These political problems have seriously interfered with the production and transportation of basic food crops such as rice, with the result that in a number of areas of Java, as well as in the strife torn Northern Celebes, famine broke out during 1958. The Indonesian government, well aware of the need to increase food production and obviate the necessity of having to import some 700,000 tons of rice annually at the expense of some 2 billion Rupiah, launched a Food Production Campaign in May, 1958 in order to make the country more self sufficient in her staples. A promising scheme to drain the marshes of Borneo and thus reclaim thousands of acres of land is included in the campaign. However at the same time the food production effort appears to have some less desirable features, which may well seriously affect the

[7] See for example H. A. Oomen in *Documenta de Medicina Geographica et Tropica*, vol. 5, 1953, p. 196.

nutritive quality of Indonesia's already inadequate diet. For a basic feature of the Food Production Campaign is to encourage the cultivation of cassava. Tho a government spokesman has denied that the government is stressing cassava production as such, two nutrition experts of the People's Food Bureau have pointed out that due to differential subsidies paid by the government to the cultivators the incentive to grow cassava is many times greater than the growing of the far more nutritive maize, and that the government is in fact encouraging a false sense of security among the populace and a dangerous lowering of the nutritional level.[8] Because of the bulk-like effects of cassava it quickly stills hunger, but as tests have shown its protein content is so inadequate as to even prevent rats from growing on its consumption.

Unfavorable Demographic Pattern

All these factors contribute to a demographic pattern in Indonesia that makes sustained development effort unusually difficult. Indonesia's birth rate may be estimated at about 40 per thousand, but it appears that nearly one-third of all children die before the 6th year; even so 45 per cent of the population is presumed to be under 18 years of age. Because of the harrowing effects of the Japanese occupation during World War II and the Indonesian Revolution (1945-1949), the birth rate in those years probably dropped appreciably so that "the number of children leaving school age is abnormally small at the present time and will be in the next few years." This factor undoubtedly will have its effects on the future supply of trained technicians which the national development effort needs. Another unfavorable demographic feature of Indonesia is the uneven distribution of the population. The Island of Java, for example, has a density of 410.6 persons per square kilometre, while the other islands have only a density of 43.2 persons. Tho both the colonial and the national Indonesian governments have encouraged the migration of persons from Java to various areas in the outer provinces the results, in terms of Java's continuing population pressure, have been very poor. Between 1950 and 1956, for example, about 228,000 persons were migrated from Java by the government's "department of transmigration," while Java's population increase in that same period was more than 20 times the number of persons moved.[9]

[8] *Times of Indonesia* (Djakarta), July 14, 1958, p. 2.
[9] *Ekonomi dan Keuangan Indonesia* (Djakarta), vol. 10, 1957, p. 422.

Since a migration of Java's surplus population to the adjacent islands has frequently been suggested as a means of improving Java's socio-economy, it is well to emphasize that such migration, even if spontaneous, cannot be separated from the presence or absence of development factors in the areas that are to receive the new settlers. A recent study of spontaneous migration conducted by the Institute for Economic and Social Research of the University of Indonesia indicates that such factors as 1) fertility of soil in the area of settlement, 2) availability of transportation between Java and other areas, and 3) presence of good marketing facilities in the host region as well as in the country generally, all play important roles in the migration process. And it need hardly be pointed out that precisely in communication and distribution facilities Indonesia is on the whole greatly "underdeveloped." To these must be added the many other difficulties that confront the potential migrant. S. Rivai, a member of the West Java provincial legislature, who recently completed a tour of the South Sumatra "transmigration" areas, noted, for example, that even tho some people in West Java were quite eager to migrate, the "bitter experiences" of voluntary migrants, who fell victim to ticket scalpers and who were deprived of all assistance, caused many potential migrants to have second thoughts. In Rivai's opinion the present system of migration "could impossibly solve" the problem of overpopulation, especially in West Java.

Low Per Capita Productivity

Again and again Indonesians themselves have pointed to the low per capita productivity as an important reason for the slowness of their country's development. On September 1, 1958 for example, President Sukarno himself, on the occasion of the opening of a new building for the Postal Savings Bank in Bandung, declared that Indonesians are less industrious compared to people who live in more demanding natural surroundings. It is probably true that the lush tropical environment of Indonesia enables the individual to obtain some food or shelter, however inadequate, with relative ease. But from the preceding paragraphs it should be clear that the physical condition of the average Indonesian is far from the level where by Western standards, maximum exertion in the productive process is possible. To reach such a level a sharp reduction in diseases like malaria and yaws and a greatly improved diet seem essential. In this connection another "coercive" factor

in the Indonesian development process becomes apparent, namely the necessity of some measure of collectivism in that process. If inadequate diet and debilitating diseases render the individual Indonesian ill equipped for hard work and rapid production increases, it is equally true that the Indonesian family, the basic socio-economic unit of production, especially in the agrarian sector where 70 per cent of all Indonesians work, is subject to the energy sapping ravages of a low protein diet and endemic illness. Individual and family, both of which, in terms of their potential incentives to produce, save and take risks, play such important roles in Western economic planning theory, may therefore not be the proper operational entity in the Indonesian development process. Considering the very high maternity-, death-, infant- and toddler mortality rates in Indonesia, family unity and stability are greatly impaired. Hence the need for a larger operational unit in economic planning, such as a cooperative or kindred groups in the labor movement and the military. In President Sukarno's much discussed concept of "guided democracy" for his country, the role of these extra-familial, functional groupings in society has been repeatedly stressed, also because of their place in the traditional Indonesian system of common deliberation *(musjawarah)* and mutual assistance *(gotong royong)*.

Education

Few studies of the Indonesian's intelligence have been published, and most of these date from the period of before World War II. IQ analyses, thematic apperception tests, and characterological and secondary function studies do not reveal any significant variations in the Indonesian's intelligence as compared with other nationalities, altho they do stress the significance of the cultural mold of his intellectual development. The work of Dutch psychologists in analyzing the Indonesian intelligence during the colonial period often revealed a strong racial bias, which undoubtedly was reflected in the extremely limited schooling opportunities accorded Indonesians in the colonial era.[10]

Educationally, Indonesia has in many ways made great strides forward in the past decade. The literacy rate has risen from about 5 per cent before World War II to nearly 55 per cent in 1957, and

[10] C. Veeneklaas, *Het Rassenconflict in de Opvoeding in Indonesie* (Groningen, Djakarta, 1949), pp. 50-71.

the school system has greatly expanded. In 1940, for example, there were a little over 18,000 primary schools, with about 40,000 teachers and 2 million pupils. By 1957 there were nearly 30,000 primary schools with 104,000 teachers and more than 6.3 million students. Between these same years various secondary schools grew from 144 to over 1500 and their combined student body from 26,500 to more than 385,000. There is now a greater variety of secondary schooling, in keeping with the commercial and industrial needs of a modernizing economy. Senior technical and trade high schools, normal schools at the secondary level, special commercial and business law curricula have all been established. To accommodate the growing demand for higher education many new colleges and universities have come into existence and there are now 25 institutions of higher learning (in 1940 there were 3), with nearly 20,000 students.[11]

This rapid growth has, however, not been free from certain problems. For one thing the problem of regression into semiliteracy is as great as ever. Pupils who have learned the rudiments of reading and writing in an elementary school have often little chance to preserve these skills after graduation in the simple folk agrarian society in which they make a living. For the great majority there will be no further schooling, since secondary schooling is not free of cost and only the wealthier can generally send their children to high schools. Libraries and printed materials are in very short supply in most rural areas. The public administrative apparatus of the government is far from efficient in administering to reading needs at the local level. Even provincial newspapers are few and have but a very limited circulation. Nor is the life of the peasant or of the rural artisan conducive to keeping up with communication skills acquired earlier. Only if the Indonesian moves into a citified atmosphere is there much chance of using these skills. Indeed, in the cities the problem of a youthful, restless, semiliterate, underemployed proletariat is becoming a major social problem.

Another difficulty is the traditional value pattern of the Indo-

[11] On Indonesia's educational development and its problems see by J. M. van der Kroef: "Educational Development and Social Change in Indonesia," *The Harvard Educational Review*, vol. 24, 1954, pp. 239-255; "Higher Education in Indonesia," *The Journal of Higher Education*, vol. 26, 1955, pp. 366-377; "Education in Indonesia," *Phi Delta Kappan*, vol. 39, 1957, no. 3, pp. 147-151, and "Social Dysfunctions of Indonesian Education," *Comparative Education Review*, vol. 2, 1958, pp. 15-20.

nesian that shapes educational preferences. The career of the white collar worker and of the bureaucrat are highly valued, learning a technical trade or vocational skill is frequently deprecated. The result is an overabundance of those seeking administrative, clerical or semi-professional positions (there is even an over supply of primary school teachers), and a continuing shortage of skilled labor and technicians, notwithstanding the availability of vocational training. In line with Indonesian government policy many foreign enterprises in the country are anxious to employ Indonesians in all levels of their operations, but their experience undoubtedly parallels that of the Standard Vacuum Oil Company which, tho it has "Indonesianized" its staff as much as possible, yet has been forced to increase its American personnel of late, because "vigorous recruitment efforts in Indonesia have not turned up the needed number of (Indonesian) nationals with requisite educational backgrounds to fill the large number of technical posts."[12]

A greater interest in acquisition of technical skills necessary for economic development, is however, dependent on a "demonstration effect." At the present low level of industrialization the social and economic rewards for the possession of such skills are still limited also. Combined with the debilitating effects of endemic disease and inadequate diet this tends to cause a tragic waste of human resources and rigidifies the entire socio-economy. The nearly unbounded faith that Indonesians possess in their ability to break through this vicious circle remains, even after a decade of instability, the most impressive aspect of their new national existence.

[12] *Stanvac in Indonesia* (Sixth Case Study, National Planning Association Series on U.S. Business Performances Abroad, Washington, D.C., 1957), pp. 77-78.

"Do It This Way" Series

Phelps, *Geography Via Television*, 1958. ($1.00). A 32-page booklet with 11 illustrations about methods and techniques for teaching by television.

Halverson, *Geography Via Pictures*, 1959. ($1.00). A booklet illustrating methods and techniques in the use of pictures, still and motion, in the teaching of geography and the social studies. (Available about April 15.)

MAKING LAND UTILIZATION MAPS: WORK IN THE FIELD WITH NINE-YEAR OLDS

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Left to themselves children, with their freshness of approach, learn a great deal of geography without knowing it. With guidance, they can do as good a job as the adolescent and young adult. In my own teaching, I had always done field work where I thought there was most scope, that is, with the adolescent and young adult, until I saw the nine-year old in the field, looking, wondering, asking and recording.

This particular group was drawn from a big private school for girls of 5 to 19 years of age. They were all urban in environment and belonged to the salary group where a trip out of town was common. But this trip on which they were to do field work lasted a whole week and was 40 miles away from home. To be 9 years old and away from home and to be with the rest of the class meant fun anyway, even tho the week was part of the term's work and lessons would go on, using landscape as the background, with farms, fields, beasts and maps as the topics.

THE AIMS OF THE FIELD WORK

There were 5 aims to the project. First, that these city children should learn what it was like to live in a very different community. Second, that the teaching—and how true this is of geography!—should not always be confined to the classroom. Third, that they should find out answers for themselves. Fourth, that they should be placed in a situation where they could be encouraged to think geographically: their curiosity could now range over the geography of that very different community, and so find contrasts with the way of life in their own suburb. Fifth, that they should learn, by making them, how maps record what they have found out for themselves. At the end of that week they had information on maps, simple notes of their own making, pictures, drawings and a day-by-day record of their activities.

Because these were children in a school with an age-range of 5 to 19, it was possible to plan the whole geography curriculum as a unit and they had already been introduced to direction, scale and plans. In their sixth grade they would be doing the local geography of their own urban area. For this particular age group recording

facts on maps would be valuable experience and so, in a rural community, a map of the use of the land would be an obvious one to make.

The Method

The method used was the one inaugurated by Dudley Stamp in the Land Utilization Survey of Britain. That is, it was the accurate recording of field observations on base maps available with a scale of six inches to the mile. For their first out-of-doors exploration of their new environment each girl was given a mimeographed copy of part of the relevant survey map on that scale. They, therefore, had the visual presentation of physical and human geography in the field but they had to locate themselves on the map and decide how to represent what they saw on the map. As they walked up the hill behind their temporary home and appreciated the steepness of the chalk slope, they were taught what it was that the contour lines showed, and how layer coloring would help to show this change of slope. As they walked they found the highways, the roads and the woods and decided upon a common scale of colors to represent these. Thus they were beginning to develop symbols for their map shorthand. Their second map, on the same scale, took them, on the second day, to the settlement in the clay vale with its river, and so they added to their work of identifying features on the map and on the ground and built up a collection of map signs. They were now oriented to their maps and the landscape and were ready to go ahead with more detailed work.

During their stay of a week they were to visit 3 farms and by observation and use of symbols, record what they saw. To help this age group cope with making records in the field, the scale of the map was changed to 12 inches to the mile, so that the fields of each farm were big enough to contain the information about crops observed. Naturally, therefore, on a map of this size the total acreage of the farm was not shown but the experience, tho in microcosm, would give them a chance to develop a sense of geographic curiosity and an opportunity to learn to look and record.

As these were city children, teaching of rural matters had to be done on the spot when the need and opportunity arose. Each class had its own teacher and 2 student teachers, taken from the group at the top of the school. This generous staffing was one of the factors making for success, as even the child with no knowledge at all of country things had a chance to get individual help. The group met with the farmer of each of the three farms and was shown

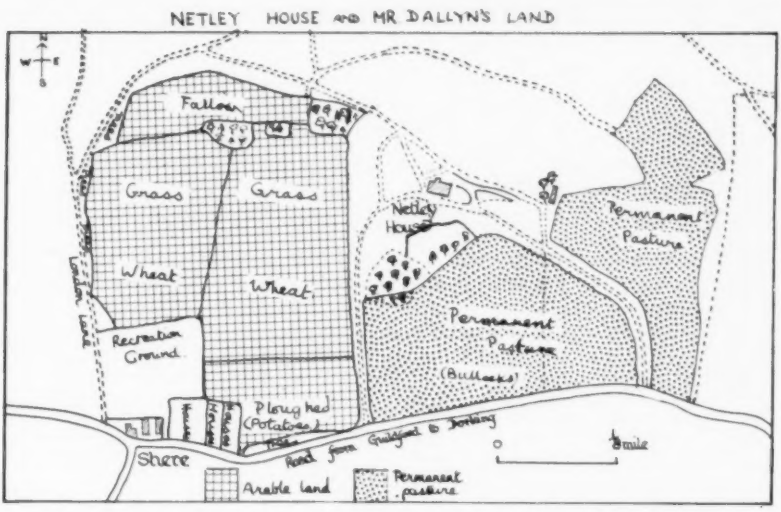

FIG. 1. A copy of an actual map made during the field week has been included. Where two colors were used in the original, Zip-A-Tone has been used in the black and white version.

equipment and allowed to ask many questions. There are few who do not respond to interest shown in their work, whatever the age of the stranger.

The route home was always planned so that fields as yet unrecorded could be seen, and this meant walking home. The distances, therefore, could never be great, another factor making this but a micro study, yet the amount seen by walking thru the field, or round them, was of value. They were thereby introduced to the feel, the look and the smell of crops and beasts. To these children this was often a wildly exciting experience. Every evening following these visits, like any adult geographer, they discussed what they had seen, wrote up their own notes and their diaries and filled in the land use maps. A two-color scheme was used, the land use being divided between arable and pastoral and then the details of the crops were written across each field. It must be admitted that the maps which finally appeared in the field books were exact copies of the ones made in the field. Few nine-year olds bursting with enthusiasm for the exact count of piglets, or tracing the course of the local stream, had field maps readable at the end of the week by anyone but the proud owner.

Tho full of energy and interest, these children had to be given

help with the kind of things they were to look for. Each time they went into the field they had a meeting with their teacher and were led to begin thinking of the kind of thing they had to look for. Then, when they themselves had contributed ideas, they were given a list of clues. The farm and its owner would give the answers. Naturally this led to group work on the spot and later at home and so a picture was built up of what was going on. With a little help towards the geographical issues involved, it was astonishing how much they saw, asked about and were able to record. For example, the following is a straight forward, accurate reporting based on good observation:

". . . Mr. Daleyn gets his bullocks from Wales. They are an Angus cross. He gets them when they are a week old and at Netley he keeps them in sheds; then when they are about six months old, they go to the fields. In the summer they are fed on grass in the fields and in winter they are fed on silage, cattle cake and hay. At Parklands the bullocks get their water from the river but at Netley they get their water from troughs. The bullocks are sold for beef when they are two years old."

Another record showed a knowledge of cropping, and this was from a town-bred child.

". . . Mr. Daleyn has several acres of arable land some of which is used for growing seed leys. Seed ley is made up of clover and rye grass. The root crops are onions, turnips and carrots, potatoes and beetroot. The potatoes are two feet apart and the carrots are one foot apart. The wheat is now six inches high. We saw people hoeing and fertilizing and a man driving a tractor. There is still a lot of last year's hay and straw left. Mr. Daleyn has a reservoir. The walls are made of concrete and the water is pumped up by an engine to water the fields."

Results

I saw this week of field work happen each year over ten years and I was always struck by the dynamic quality it had. It was not easy for the lazy or the limited to do nothing; there was too much enthusiasm for what they had been doing or seeing. It needed very careful planning and it had to have the blessing of the authorities and the tolerance of the farmers. Also, the timing of the field work in the school year was decided by the out-of-season rates offered by the hostel.

Once they were back in the city, each girl finished the note book and maps. They were now able to find their way about with maps, use map short-hand, and talk with confidence, born of first-hand experience and knowledge, of the use of the land of three sample farms. As precious evidence they had their maps; they might have been only nine years old, but they were true geographers.

FUNDAMENTALS IN MODERN GEOGRAPHY

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The teaching of modern geography, just like that of many social sciences, has grown so comprehensive in scope it seems almost a superhuman task to cover the material adequately in the one semester or two allotted. As a result the intensive and fundamental approach to geography has been shrugged aside, and the cursory examination and superficial inspection, now taken for granted in many social science courses, is the rule rather than the exception.

Fundamentals are the very meat of a content course. They give the students something concrete. They provide the framework out of which all material should flow. The grasping of fundamental ideas provides the student with a sense of accomplishment and purpose which he does not receive from directed busy work.

In the subject of geography the opportunity to teach fundamental concepts is so superb it seems a shame that most modern textbooks spend little time developing them, and then usually do it so poorly most teachers pass over them too briefly. Most concepts fundamental to physical geography are certainly not boring. Practically all pupils express interest and curiosity in such phenomena as the rotation of the earth, the universe and its structure, the phases of the moon, the causes of cyclones, the age of the earth, the tides, and prehistoric man. Why not let this natural inquisitiveness of youth direct the course of study, and allow their questions to be answered?

What favor are we doing youngsters by informing them of the whereabouts of tungsten if they do not have the slightest idea of what tungsten is and why anybody would want it? The fundamentals should be developed first. They are the concrete upon which pillars of understanding can be built, and built to last for a time. Geography without physical fundamentals is nothing but a collection of material and immaterial trivia, but if placed in proper perspective, and given coherence by well adjusted fundamentals, geography presents a clear cut pattern and a well formulated purpose of study.

Probably the most important question is, what are the basic fundamentals of physical geography. The outline here presented is

purely personal, and teachers can supplement or omit as they see fit. We must realize the study of fundamentals cannot always be a hilarious merry-go-round. There will be moments of hard work and hours of instructional struggle, but any teacher who works his way slowly thru these basic ideas can watch his class grow steadily in intelligent insight and functional skill. And above all, the students themselves will realize that they are actually learning, and not merely biding time.

Unit 1: The Physical Sciences and the Social Studies

The basic concepts to be developed in this unit are the differences between the physical sciences and the various social studies areas, what each studies, the methods experts use, and the way in which their findings are expressed. A list of the various studies may be presented so students can become familiar with terms like chemistry, paleontology, oceanography, cosmology and metallurgy. They should realize that history, economics, psychology, and the other social studies each have unique contributions to make in understanding human relationships, and they should be shown where geography fits into the total pattern of social and physical science research. This particular phase of study need not take too long, but when finished the students have sunk their teeth into fundamentals, have already begun systematic thinking, and have actually accomplished the task which they set out to understand.

Unit 2: Astronomy and Cosmology

The possibilities for teacher initiative and pupil comprehension in this unit are (actually) endless. There is a human propensity to speculate on the structure of the universe, the formation of stars and the movements of galaxies. Develop this curiosity into an understanding of the total pattern of the universe system, and where our solar system and the earth take their place in this grand scheme. Discuss theories of the origin of heavenly bodies, and let the pupils become acquainted with the activities of meteors, comets, planetoids, moons, and other celestial bodies. When specializing in the study of the earth from an astronomical standpoint do not skimp. Explain revolution and rotation, causes of day and night, the change of seasons, the inclination of the polar axis, and latitude and longitude. Explain mathematically how antipodes are located, and the point where the vertical rays of the sun may be falling on a given day. These are fundamental concepts of physical geography

with which pupils can perform concrete work. This gives them a chance.

When talking about time, go into it more thoroly than calculating standard time. Use civil time and determine local time from longitude readings of various localities. There is much room for variation and recreation in working time problems. Let the students understand the functions of a chronometer and how it can be used. Spend some time on the International Date Line and its purpose, and how it can present many unique problems.

When working on this unit build a broad vocabularly. Use such words as eclipse, zenith, equinox, solstice, and occultation. Go thru the various celestial phenomena step by step. Include the phases of the moon and their causes. A well covered unit on astronomy and cosmology cannot help but bring tremendous rewards to any class. High school students want to know how to figure when the leap years will be, and how big the earth is in its various dimensions. Once they have covered this material their thinking will be a little more systematic and much more productive.

UNIT 3: GEOLOGY AND PALEONTOLOGY

Now that basic understandings have been developed as to the place of the earth in the universe, specialize in the historical development of this planet and the evolutionary pattern of life as portrayed by uncovered fossils. Go thru the whole panorama of geologic eras and periods, their tremendous length of time, and the contemporary life developments scientists have uncovered in each. Dig deeply into the formation of the glacial epochs, the age of dinosaurs and giant reptiles, and the present interest of happenings which took place during the Carboniferous period. Confront the class with a geologic vocabulary, such as Cambrian, Devonian, Silurian, Oligocene and Cenozoic. This is an excellent point for discussion of such topics as survival of the species, reasons for extinction, and the apparent late entry of man into geological history, and his development thru the stone, bronze and iron ages.

The study of time perspective as revealed thru geological research lends profound humility and insight to a pupil's progress and understanding.

UNIT 4: PHYSIOGRAPHY AND ITS CHANGE

This phase of study approximates many persons' stereotyped impressions of the content of geography. In many localities this

narrow viewpoint is justified because that is the way geography is presented. Physiographic concepts are only a part of the disciplines incidental to sound geographic understanding, but they are a vital part and every effort should be made to present them clearly.

Analyze various theories of continent formation, and the working of rivers, volcanoes and earthquakes. Build a vocabulary consisting of terms such as bluff, gorge, Fjord, peninsula, island, archipelago and timber line. Go into formation of lakes and mountains and the influences of glacial activity. Check your local region thoroly and explain its physiographic structure from a historical viewpoint. The names of the continents, their relative size, differences and similarities can be discussed at this time. Such processes as erosion and deposition and the formation of igneous, sedimentary and metamorphic structures can add depth to this unit and further the basic functional skills of the class as they come face to face with the complexities with which nature confronts us.

Unit 5: Oceanography

This short unit which properly should fit into the one on physiography can conveniently be isolated because of the basic differences between oceanic and continental phenomena. The ocean currents and their results, and causes of tides, and tidal influence in the various oceans and enclosed seas and bays, icebergs, pack ice and floe ice, tidal waves and seiches are all various concepts fundamental to a good understanding of marine influence. The importance of water for all life, differences between saline and fresh water, underground water sources, and the future possiblities of the oceans as a supplier of food and strategic materials all offer possible opportunities for expansion of thought and the development of more and keener insight into the nature of the geographic process.

Unit 6: The Earth's Atmosphere

This is another brief unit which progressively leads to a fuller discussion of atmospheric conditions under the unit on weather. The basic concepts in this subject are the various layers of the atmosphere, their relative heights and the physical activities associated with these layers such as the auroras, sensitivity to sound and broadcast waves, temperatures and chemical structures, and man's progress in reaching these altitudes with various devices.

Unit 7: Meteorology and Climatology

As in the unit on astronomy the possibilities for research and discussion of weather phenomena are seemingly without end. Developing an understanding of basic ideas such as condensation, radiation and evaporation, the air pressure, pressure belts, and the formation of rain and all of its possible ramifications could be continued indefinitely. Investigation of weather instruments like the barometer and hygrometer, and interpretation of weather maps can be made both scholarly and functional. Expose the classes to cyanometry and nephanalysis, and delve into the formation of air masses and such atmospheric commotions as cyclones, tornadoes, hurricanes, monsoons and simoons. Develop an appropriate vocabulary and an understanding of the causes of lightning, thunder and other phenomena.

The ignorance of the general public concerning the nature of climatological processes attests to the fact that this phase of geographic fundamentals has been ignored by our secondary schools.

Unit 8: Minerals and Metals

Nowhere in the field of geography do modern texts leave more to be desired than in the study of minerals and the important metals. Practically all discussions, are concerned only with coal, oil, the strategic minerals, such as copper, tin, iron, and the economically desirable ones such as silver and gold. According to the 1956 almanac the 19 most valuable minerals in the United States listed in order are: oil and its by-products, coal, cement, natural gas and its products, iron ore, building stone, copper, sand and gravel, zinc, lead, clay, sulfur, lime, salt, phosphates, gold, potassium salts, molybdenum and silver. It is not enough to list countries where the materials can be found. The natural conditions, geographic and geologic, under which such minerals are found and which affect their exploration should be explained. The place and manner of occurrence of a mineral affect costs and methods of mining. Their uses, and the methods of securing and refining them into productive commodities should be understood. In a discussion of bauxite, tungsten or antimony the factors which make these materials economically desirable should be outlined. This brings minerals out of the abstract world of place-listing and puts them on a concrete basis where they can be analyzed. Time should be spent in exploring all

the phases of the world's interest in minerals; the power agents, the construction and alloy minerals, the highly specialized metals, the key and precious metals, non-metallic minerals and precious stones. Once these fundamental concepts have been met, students find more meaning in the age-old custom of listing areas of mineral output.

Unit 9: Other Raw Materials

This unit can be a lengthy and comprehensive one, but it is best condensed into small meaningful parts. Discussion of the chief foodstuffs such as cereals, millets, starches, sugar and the principal liquids, coffee, tea, mate, cacao, and alcoholic beverages, various fruits, animal and marine products, textile materials, timber, rubber, gums, and resins, dyes, and pigments, vegetable oils, drugs and spices, tobacco and other similar commodities can add much to a more fundamental understanding of man's role in a geographic world.

Unit 10: Cartography

To conclude the work on fundamentals a thoro understanding of the construction of various map projections, uses of maps, and the many ways which maps are distorted and how cartographers attempt to correct these false impressions.

Summary

These ten units are flexible enough to allow teachers much margin in presentation and organization.

We need the humanitarian insight of social geography, and the understanding of biogeography and zoogeography, but above all we need the fundamentals of physical geography to form the very floor upon which successful concepts of the activities of man and his relationship to the earth on which he lives can be formed. If anything is to be sacrificed in the geography course, be sure it is not the fundamentals.

Convention City for 1959

The 45th Annual Meeting of the National Council for Geographic Education will be held at the Sheraton-Cadillac Hotel, Detroit, Michigan, November 27 and 28, 1959. Program plans are now underway.

BOOK REVIEWS

Henry M. Kendall, Robert M. Clendinning, and Clifford H. MacFadden. **Introduction to Geography.** Harcourt, Brace & Co., New York, 1958. 684 pages with index and appendices. $7.50.

Introduction to Geography is a revised edition of this widely used college text. Changes in sequence and in presention have been made, based on extensive class use. Part I is an "Introductory Survey" and discusses objectives of geographic study and the tools of geography. Part II presents the "Elements of the Physical Setting." Part III treats the "Elements of the Cultural Setting," and Part IV "The Varied and Changing Scene." Most of the text is devoted to Parts II and III. The theory of climatic pattern, and a discussion of the Köppen classification of climates, have been moved to the appendix.

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Indiana University

Sidney E. Ekblaw and Donald J. D. Mulkerne. **Economic and Social Geography.** McGraw-Hill Book Company, 330 West 42nd Street, New York 36, New York, 1958. 415 pages with maps, illustrations, appendix, and index. $4.56.

The authors have presented an attractive text presumably designed for use in the secondary school. An especially good feature is the section of color maps at the beginning of the book; likewise the photographs are well-selected and reproduced. The teacher may appreciate the suggested discussion topics and projects at the end of each unit.

The text itself, however, contains so many statements whose validity must be questioned, so many inaccuracies and contradictions, that it will require an especially skillful teacher to prevent many misconceptions being carried away by the students. Can one accept the flat statements that, "Plateaus are healthier than lowland plains" or the invention of a "Southern Ocean"? Canadians will be alarmed to find Newfoundland a separate Commonwealth; Manchurians will be pleased to learn that they have been granted autonomy as an independent state; Norwegians may be disturbed to learn that Grieg was a Swede. On page 61 Australia has a population of 6½ million; in Table XII, page 406, it has 8.2 million. Australians will rightfully object to the omission of Sydney from the table which lists cities of 500,000 or more people.

The climatic organization resurrects a highly deterministic philosophy and may cause confusion in the minds of students. Agricultural commodities cross climatic regional boundaries and the student may wonder about the discussion of Louisiana rice in the unit entitled "Subsistence Agriculture in the Tropics."

At a time when geography apparently has difficulty existing in the public school, it is unfortunate that the authors have not given as much attention and care to the textual material as they have to the physical appearance of the book.

S. EARL BROWN

Ohio State University

Robert M. Glendinning. **Eurasia.** Ginn and Company, Boston, 1958. 438 pages with index, maps, illustrations, and statistical tables. $4.96.

This is the most recent volume in Ginn's new series of geography texts, "Lands and Peoples of the World." *Eurasia* is designed for the seventh grade. It is organized on a

political basis, moving from the British Isles, thru Europe, the Soviet Union, the Far East, Southeast Asia, and Southwest Asia. The European portion receives heaviest emphasis in terms of page length altho it is a well balanced book for the traditional curriculum.

Problems of oversimplification and generalization appear in this text, as in others which attempt to cover more than 50 nations in a single book. In spite of good writing and an attractive format, one wonders what broad geographic concepts the student will retain after studying his way thru the morass of place names and products that this technique seems to dictate. To high-light these nations, this text employs the device of using catchy slogans, such as "The Republic of India: *A Crowded Land*," and "Thailand: *A Land of Happy People*." Indeed, much of India is crowded and most Thais are happy. But, on the other hand, there are sparsely populated areas in India, just as there are surely some unhappy people in Thailand. It would be well for us to avoid the use of stereotypes in teaching geography, for stereotypes generally add little toward developing a real understanding of a land and its people.

Eurasia contains more than 100 maps, charts, and diagrams. Many of them come from the skilled cartographic hand of Richard Edes Harrison. Teachers and students alike will appreciate the excellent political-physical maps and the many comparison maps. The liberal use of well selected photographs, often in color, also add to the attractiveness of this text.

PHILLIP BACON

Teachers College, Columbia University

Harold Fullard and H. C. Darby, Eds. **The University Atlas.** George Philip and Son Ltd., London, 1958, 8th Ed. 176 pages plus 88 pages of index. $5.95. Distributed in the United States by Denoyer-Geppert Co.

This atlas is competitive with **Goode's World Atlas** ($7.50) and the **Prentice-Hall World Atlas** ($9.00).

In comparison, the *University Atlas* is superior in coverage of place names, physical features, and Europe, but inferior in its presentation of North America. It is the equal of *Goode's* in legibility and in attractiveness of contour-interval color tinting; it is bigger than the *Prentice-Hall* atlas—more and larger-scale hypsographic maps which, unfortunately, are much less effective in creating three-dimensional illusion.

The popularity of the *University Atlas*, first published in 1937, is attested to by this thoro revision. Professors and graduate students, particularly if specializing in the geography of Europe, will find this atlas extremely useful—American undergraduates will be better served by its competitors.

CLARENCE L. VINGE

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REVIEW

Bruce C. Netschert. **The Future Supply of Oil and Gas.** Johns Hopkins Press, Baltimore, Maryland. 1958. 134 pages. $3.00.

The future supply of oil and gas in the United States has long been an intriguing subject for discussion in which there has been considerable controversy. The major objective of this book is not to arrive at forecasts or projections of future crude oil and natural gas production or consumption in this country, but the study is concerned with availability.

The author considers three factors that determine the future possible productive capacity of the oil and gas industry. The first is the natural reserves of petroleum and natural gas. The second treats the technology of finding and producing them, and third, the production between now and 1975.

The first two factors are intensively discussed, but the third is conveniently dealt with by assumption, namely, that the growth in output will be constant, by and large, whatever the possible productive capacity in 1975 may be. The present study is not a mechanical extrapolitan of statistical trends, but is primarily an examination of variables.

The author concludes that there are about 500 billion barrels of crude oil available for exploitation in the United States. Whether this amount can be discovered and extracted is still problematical.

This volume analyzes one of our major mineral problems today. The availability or lack of availability of petroleum and natural gas in this country has many implications particularly as to how rapid atomic energy needs to be developed to supply the energy requirement of the nation.

E. WILLARD MILLER

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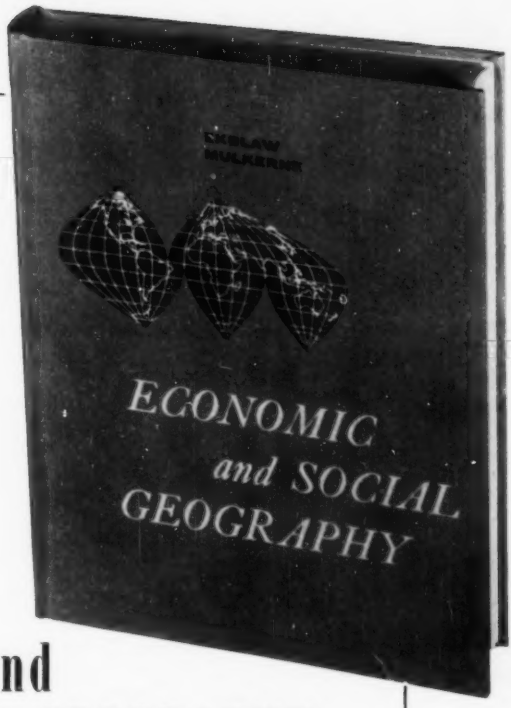

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REVIEW

Nicholas Guppy. **Wai Wai—Through the Forests North of the Amazon.** E. P. Dutton & Co., New York, 1958. 361 pages with illustrations, index, and end map. $5.95.

This book is an account of an expedition over the mountainous Serra de Acarai region of southern British Guiana and the adjacent portion of northern Brazil, the home of the Wai Wai Indians. Guppy, trained in botany in England, vividly describes many species of the varied plant and animal life, as well as the few Indian tribes encountered in the selva of the headwaters of the Essequebo and Mapuera Rivers. Guppy's account is a useful contribution because the area is so little known, having been visited only by Schomburgk (1837) Farabee (1914), the Anglo-Brazilian Boundary Commission (between 1933 and 1938), and the Terry-Holden group (1938)—the only expedition to cross the Acarai Mountains and descend the Mapuera River to the Amazon.

Guppy, a botanist for the Forest Department of British Guiana, used his experience together with that of Forest Department workers and Indians of the locale, in identifying and mapping plant species in selected plots of forest. This reviewer was disappointed that the author did not give a more definitive description of the forest structure because the many plots he mapped, selected on the basis of the physical terrain and how the plant life of the selva responds to variations in soil, slope, and drainage, would have permitted him to do so. Instead, the book is a detailed chronological account of the plants, animals, rivers, landforms, and natives encountered as the journey is made. The detailed index is, however, highly useful for the plant specialist because it permits the reader to note the number of places and the setting in which the described plants are found.

Guppy feels his expedition supplied strong evidence to support his hypothesis of the nature and distribution of the tropical forests. He classifies them first by the "landscape-forming process, such as erosion of deposition, which they accompanied and influenced, secondarily by the soil and its stage of development, thirdly by the influence of such outside agencies as man, animals, fire, high winds, and only fourthly by species and structure."

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